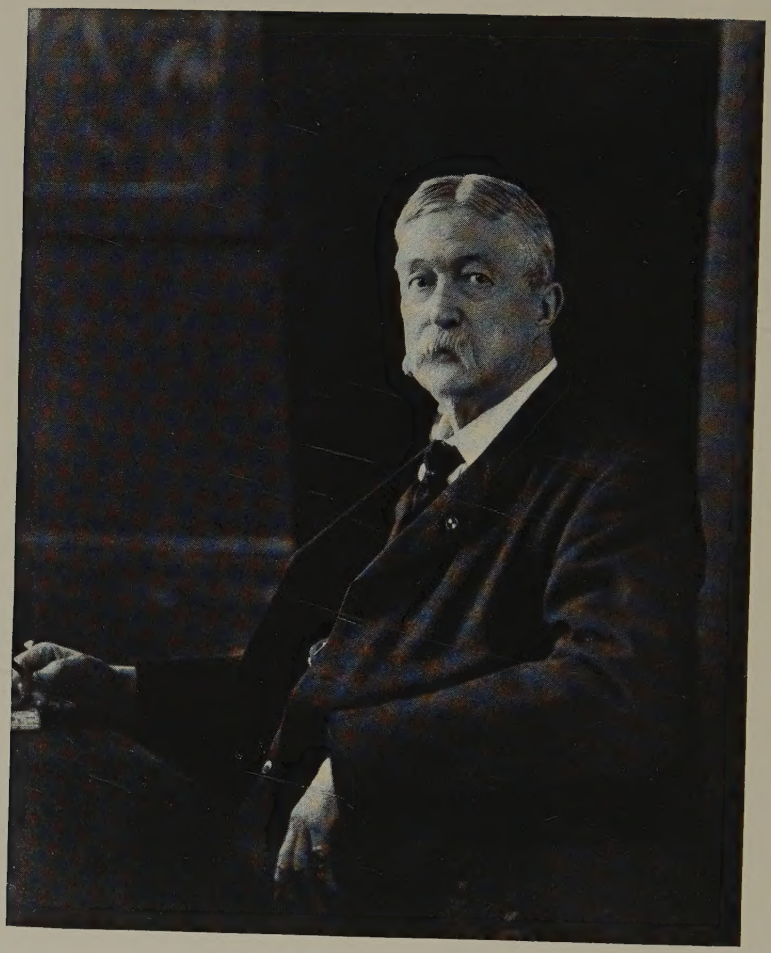

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J. S. Billings

John Shaw Billings

CREATOR OF THE NATIONAL MEDICAL LIBRARY
AND ITS CATALOGUE
FIRST DIRECTOR OF THE NEW YORK
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HARRY MILLER LYDENBERG

CHIEF REFERENCE LIBRARIAN OF THE
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1924

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PREFACE

In the following sketch emphasis is laid upon the man as bibliographer and librarian, to the neglect of many other fields in which this versatile character held high rank. Dr. Fielding H. Garrison has given us the official biography of Dr. Billings (Putnam's, 1915). For quotations from letters I am indebted to Dr. Garrison's work. Quotations from Dr. Billings's own writing have been taken from the original sources. References to the Surgeon-General's Library and to the New York Public Library are in general based upon the printed records of those institutions, supplemented in the case of the latter by the personal knowledge gleaned through daily contact for fourteen years and more.

H. M. LYDENBERG

May, 1924

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JOHN SHAW BILLINGS

CHAPTER I

THE STUDENT—INDIANA AND OHIO

JOHN SHAW BILLINGS was born in Cotton township, Switzerland County, Indiana, April 12, 1838. His father was James Billings of Saratoga, New York, his mother Abby Shaw of Raynham, Massachusetts; they were married July 21, 1835. The greater part of his boyhood and youth was spent in Indiana, but his first ten years saw him successively in Indiana, New York, Rhode Island, then back in Indiana.

His own description of the New York period is worth quotation in full:

> The first thing which I can recollect is a scene in the house of a New York Farmer near Batavia, which scene occurred in the winter of 1842, just about 50 years ago. A house of two rooms, a boy four years old with the croup, tucked up in a feather bed with many covers, his mother impressing upon him that he must lie perfectly still while she went to the nearest neighbor's, a mile away through a snow storm, to get a burning brand with which to rekindle the fire in the big fireplace. Then the boy lying there alone, looking at the spotted quilt, wondering what dying was, whether it would hurt, whether his mother would get back before he died, feverish, restless, but not daring to move, making out faces in the cracks in the walls, then his mother bursting in, powdered with snow, swinging a brand, the kindling of the fire—and

then—a blank for nearly two years, at the end of which he found himself in Providence in a public school.*

When John was about ten the family moved from Rhode Island to Indiana, where his father kept a country store in Allensville, and here young Billings lived until he left home for college and the great world beyond.

Allensville is in Switzerland County, a river county in the extreme southeast of Indiana, almost enclosed by the Ohio in one of its great bends. Vevay, the county seat, comes to mind as the location of an early Swiss settlement. Allensville is about the centre of the chord of the arc from Vevay to Rising Sun, county seat of Ohio County, to the eastward. The whole region was tributary to Cincinnati, which was about sixty miles up the river.

One phase of Indiana life of this period is imperishably set forth in Edward Eggleston's *Hoosier school master* and *Hoosier school boy*. We must remember, however, that though these pictures are undoubtedly accurate, they represent but one type. For life in the Billings family we get a better idea from George Cary Eggleston's sketch of his brother Edward called *The first of the Hoosiers* or his own autobiographical *Recollections of a varied life*. The Egglestons lived at Vevay and had Virginia and Kentucky connections; the Billings home was at Allensville and had New England traditions. We are fortunate, too, in having another intimate portrayal of a boy's life in the Ohio valley at that time sketched by William Dean Howells in

* MS. in New York Public Library.

his *A boy's town*. This, to be sure, has Hamilton, Ohio, and the valley of the Great Miami as its setting, but the picture is none the less typical because its scene is a few miles to the eastward.

It was, strictly speaking, a pioneer community. Along the river men worked as boatmen, artisans, merchants; back from the river stretched farm lands. The real pioneers were not so far removed, however, that their spirit and their memory had disappeared. Throughout his life Dr. Billings retained charming little westernisms in his speech, and throughout his life he retained the spirit of the pioneer. If a thing seemed necessary or useful, it was done. That it had not been thought of before, had not been done before, that materials were lacking, such things were obstacles of but casual importance; if it was to be done, the materials at hand must suffice—men had always been masters of materials and they would control them now.

With its New England traditions the Billings family counted books quite as necessary household equipment as tables, chairs, or clothing. The mother was a persistent reader, most catholic in her taste. I remember her well in Dayton, Ohio, some thirty years ago, a deliberate old lady, with a compelling eye, who knew what she wanted—and got it. She was one of the most regular patrons of the Dayton library, reading constantly and widely, apparently enjoying biography, fiction, travel, philosophy, equally well. Many of her traits were reflected in her son.

This pioneer spirit of independent thought, this love of reading, was clearly set forth in a biographical

essay he made in later life, charmingly characteristic of the man:

I first got a realizing sense of my own personality or individuality when, a boy about eight years old, I was at work on a hillside on the farm of Tristram Burgers, near Providence, R. I. My father was the manager of this farm, and my business that sunny afternoon was to chop up and dig out by the roots all the Canada thistles I could find in the pasture.

I had read the Bible through—verse by verse, also Robinson Crusoe, Deerslayer, Pathfinder, and Pilgrim's Progress—but I had never done any thinking that I can remember. But on this memorable afternoon, I stood on the hillside and looked over Narragansett Bay, and wondered where all the catboats and schooners with their white sails came from, and were going to. Then my thoughts took this turn: "The only person who can know that is God. He knows everything that has been, and is, and is to be. Then, hundreds and thousands of years ago, He knew that I should be here to-day, and that each of those boats would be just where it is, and that I should be thinking of them. Then, as His knowledge must have been perfect, it is absolutely necessary that I, just as I am, knowing just what I know, am here at this moment, looking at these ships, which also must be just where they are. Then everything must be arranged and ordered to be just as it is, and no one can prevent it. Therefore, I am not responsible for where I am nor for what I do." I was surprised at this conclusion, and thought I had made a great discovery, and resolved to tell my mother about it when she was worrying about our troubles. I did tell her about it that night, and said that there was no use in worrying any more. She looked at me in a scornful sort of way, and said, "Who's been teaching you about foreordination?" "No-

body taught me," said I. "I found it out by myself—don't you see it must be so?"

My life on the Burgers' farm, from about five to ten years of age, was that of an ordinary farmer's boy. I dropped four or five grains of sweet corn in the proper place in the furrow in planting time. I helped weed the little carrots and young beets, rode the horse for horse-raking the hay crop, went to a country school for three months in the winter, made little clam-bakes along the shore with my cousins William Henry and Charles Shaw, and read everything I could lay hands on. I managed to get a dollar for subscription to a little lending library in a book shop, and the first books I took out were Deerslayer, Pathfinder, and Jock o' the Mill. I had for my own Robinson Crusoe, Marco Paul in the forests of Maine, Harry and Lucy, and Plutarch's Lives, and was quite sure that I did not want to be a farmer.

When I was about ten years old, my father moved to Indiana and established himself in a little cross-roads village called Allensville, on the road from Rising Sun to Vevay. Here he kept a country store—was postmaster, and had a small shoemaker's shop in which one man was employed. I learned something of shoemaking—had some experiences in keeping store. I read incessantly. Came across a book—I have forgotten its title—which had a number of Latin quotations in it, asked a young clergyman (John C. Bonham) how I could learn Latin—and got a Latin grammar and reader—a copy of Caesar, and a Latin dictionary, and set to work. It was difficult, but with the aid of Mr. Bonham I made good progress. Then I made an agreement with my father that if he would help me through college in the least expensive way, all of his property should go to my sister, and that I must expect nothing more. I then got some Greek books, a geometry, etc., and went on to fit myself to pass the entrance examination for the sub-freshman class at

Miami University, Oxford, Ohio. I succeeded in doing this in a year—and passed the examination in the fall of 1852. For the first two years I kept bachelor's hall, living on bread, milk, potatoes, eggs, ham, etc., such things as I could cook myself. The lessons gave me little trouble. Most of my time was spent in reading the books in the College Library. I was omnivorous, read everything in English as it came, philosophy, theology, natural science, history, travels and fiction.*

His Indiana life stopped when he entered Miami in 1852. This was the nearest college; it was the oldest in western Ohio, and at that time ranked as high as any in the region. Though its name put it in the class of universities, the institution was nevertheless a college, a typical western college of the period, with an inflexible curriculum teaching the classics, mathematics, moral philosophy, as it was called then, some history, some natural science. The faculty numbered from 7 to 10, and the students 200 to 250, at this period. Technically an undenominational school, the influence of the Presbyterian clergymen who had served as its presidents was very strong. Whatever present-day pedagogy may have to say about the methods of 1850, the spirit of the place was helpful and strengthening, if one may judge from the long line of strong men included in its alumni record.

Of his life there young Billings has left us two illuminating glimpses. The first is a contribution to the *Youth's Companion* of November 10, 1892, entitled *How Tom kept bachelor's hall*. It is of course impossible to identify "Tom" with John Billings in

* *John Shaw Billings: A Memoir*. By Fielding H. Garrison. New York, 1915, pp. 2–4.

every respect, but there is no question that the life he described is the life he lived. It is a lengthy article, but its spirit and interest must justify extensive quotation:

There were no servants, waiters or scouts about the "old south-east"; you had to carry your own wood and water in, and your own ashes and rubbish out. Bread and milk were delivered once a day by the baker and milkman, but all other articles of food must be brought from the village, a few hundred yards away. Tom was what is called a natural born cook; and he was also a very bad violin player. Of course, therefore, he was much prouder of his ability to give a halting and mangled rendering of the Arkansas Traveller or Money Musk with his fiddle than of his uniform success in producing delicious buckwheat cakes.

One of Tom's special dishes was papered eggs. As it was much easier to learn to cook these than it was to make buckwheat batter come out right in the morning, a good many of the boys, including some who lived in boarding houses, mastered the technicalities of their preparation. Thus papered eggs became a common dish in the "south-east" — especially about eleven o'clock on winter's nights.

Now the art and mystery of papered eggs is as follows: Take a half-sheet of stout letter paper, fold up the edges all round and fasten them at the corners with pins, so as to form a shallow pan about an inch deep.

Break half-a-dozen eggs into a dish, put the paper pan on the top of a hot stove, and tip the eggs into it before it begins to scorch.

Add pepper and salt, and with a spoon scrape up the egg from the bottom of the paper pan as fast as it begins to harden, so that the liquid part may run in and keep the bottom moist, in order to prevent the paper from

burning. When the whole is sufficiently cooked, take it off the stove and eat it hot from the pan.

You see that in this way one is always sure of having a clean pan and a clean dish, which are things that a boy housekeeper does not always provide for himself. It is not the cooking itself, nor the serving the meal, that worries a boy, so much as it is the cleaning up and putting away of things just at the precise time when he wants to do something else.

The same is true with regard to making the bed. I have never known a time when it was convenient for a boy to make his own bed, and of course it had to be left occasionally, say about five mornings a week, with merely pulling up the spread so as to cover the disorder beneath.

Every night when we got into a bed that had been left in that way we admitted that it was better to make it up every morning; but when the morning came, and there was just time to get into one's clothes and get to chapel by the time the bell had stopped, it was no use to think about bed-making.

Tom had one special advantage over the rest of the boys in his housekeeping, and that was that he could sweep his floor into his fireplace and burn his rubbish, instead of being compelled to sweep it under the bed for six days in the week, and painfully gather up the collection and throw it out of the window on the seventh, as was the general custom among the "south-easters." As for dusting, that was only done when circumstances rendered it absolutely necessary.

The possession of a fireplace also made it possible to broil a steak or a chicken, and Tom was the only boy who possessed a gridiron. Like the rest of us, however, he preferred the frying pan for regular use, partly, as he said, because it did not scorch his face, and partly on account of the possibilities which it afforded for mixtures

of hot fat, flour and water, which were dignified by the name of gravy.

Many labor-saving contrivances were employed in Tom's culinary department which have not yet been described in cookery books; as, for instance, the boiling of the breakfast eggs in the hot coffee. In fact the whole business was a persistent effort to work along the lines of least resistance.

The second glimpse comes in an address he gave at the opening of the new library building at Radcliffe College, Cambridge, April 27, 1908:

When I was in college fifty years ago, the Library was not recognized as a part of the system of instruction. No professor ever referred the students to it, or suggested any use of the books in it. It contained about 8,000 volumes and was open on Saturday mornings from 9 to 12. Each student could borrow two books, many of them did not borrow any, and I always found it easy to get half a dozen or more students to give me permission to borrow for them, so that I usually left with as many books as I could conveniently carry.

During the long summer vacations I used to make a burglarious entrance into the library, and then I had long hours of enjoyment. I had no wise librarian to guide me, — I simply tried every book on the shelves, skimming and skipping through the majority, and really reading those which interested me, and if there had been a librarian there I should have carefully kept away.*

His autobiography states that he "kept bachelor's hall" for the first two years; the "burglarious entrance into the library" of the Radcliffe address seems to indicate that the family had moved to Oxford and

* *The Radcliffe Magazine*, June, 1908, v. 10, pp. 107–117.

that he lived at home for the latter portion of his college days. The biographical sketch of his father in the Dayton, Ohio, newspaper at the time of his death states that he "removed to Oxford, Butler County, where he was in business for a long time."*

Young Billings graduated from Miami in 1857, ranking second in the class. He planned to study medicine, but it was necessary to wait a year till he earned money enough for the medical school. The summer of 1857 was spent in travelling with an itinerant showman who had a good collection of lantern slides, but had no one to give the accompanying lecture. Few young college graduates would not have jumped at such a chance, and Billings really brought to his employer a store of accurate knowledge and ready information that must have been very grateful. By this means and by tutoring, he earned and saved money enough to enter the Medical College of Ohio, at Cincinnati, in the fall of 1858.

Then followed two of the most exacting and exhausting, most formative and helpful years of his life. With all too scanty funds he had to practice severest economy, to undergo harmful privations. At the memorial meeting held in the New York Public Library after his death, Dr. S. Weir Mitchell said, "Of these years of privation he spoke to me once or twice, with assurance of his belief that he never recovered from the effect of one winter in which he lived on seventy-five cents a week, subsisting chiefly on milk and eggs."† He lived in the hospital, cared for the

* Garrison, p. 407. † *Bulletin of the New York Public Library*, v. 17, p. 513.

college dissecting-rooms, boarded himself, bought few clothes, and studied medicine with the same quiet persistence he brought to bear on every task he undertook.

The best characterization of the methods then in vogue is his phrase, "In those days they taught us medicine as you teach boys to swim, by throwing them into the water." It was not long before he discovered that the classroom textbooks and lectures were but incidental to the work of the laboratory and the hospital. Long years after, he described his medical college experience as follows in a speech at a meeting of the Harvard Medical Alumni Association, June 26, 1894:

Some thirty-three years ago, a long time ago, "in the days when Plancus was consul," I graduated in medicine in a two-years' course of five months lectures each, the lectures being precisely the same for each year. I had become a resident in the hospital at the end of the first year's studies. There was I a resident of the City Hospital of one hundred and fifty beds, where I was left practically alone for the next six months, the staff not troubling themselves very much to come during the summer time, when there was no teaching. Remember this was a long time ago, "when Plancus was consul." In those two years I did not attend the systematic lectures very regularly. I found that by reading the textbooks, I could get more in the same time and with very much less trouble. I practically lived in the dissecting-room and in the clinics, and the first lecture I ever heard was a clinical lecture. The systematic teaching of those times I have had to unlearn for the most part. There is a new chemistry, a new physiology, a new pathology. What has re-

mained is what I got in the dissecting-room and in the clinics.*

Dr. Mitchell gave a charming description of the manner and appearance of the young student at this time, in his address above mentioned, when he told how he became a paid demonstrator of anatomy immediately after graduation and served also in two hospitals. "There is a pleasant little personal story of those days of training illustrative thus early of his winning ways. The nursing being conducted by Roman Catholic Sisters, his gentle gravity, the look of mild melancholy — never quite lost in after days — the lambent blue eyes, and a certain sweetness of expression, caused him to be spoken of now and then by these ladies as the 'St. John of the Hospital,' which certainly would have amused him, but which was a tribute of admiration not to be won by mere looks alone." †

Besides the requirement of attending a certain number of lectures, the Medical College of Ohio demanded from its candidates for a degree a graduation thesis. Billings chose for his subject *The surgical treatment of epilepsy*, and the preparation of this thesis, the work of that twenty-two year old medical student in Cincinnati, had a most amazing and most unexpected influence on the development of American medicine and American library economy. If the Billings life story were set to music, "books" would furnish the theme, and we hear it now as he graduates from the

* *Boston Medical and Surgical Journal*, p. 141.

† *Bulletin of the New York Public Library*, v. 17, p. 513.

medical college just as we have heard it on the shore of Narragansett Bay, and in the college life at Oxford. It was "the performance of this melancholy duty," as he described his work on his thesis, that led him to see the necessity of an index to the literature of medicine, and it was the conception and development of this vision of an index that led him into the ranks of librarians.

In this instance, as in most others, his own words are best, and I shall let him tell the story in his own fashion:

In the thesis just referred to, it was desirable to give the statistics of the results obtained from certain surgical operations as applied to the treatment of epilepsy. To find these data in their original and authentic form required the consulting of many books, and to get at these books I not only ransacked all the libraries, public and private, to which I could get access in Cincinnati, but for those volumes not found here (and these were the greater portion), search was made in Philadelphia, New York, and elsewhere, to ascertain if they were in any accessible library in this country.

After about six months of this sort of work and correspondence I became convinced of three things. The first was, that it involves a vast amount of time and labor to search through a thousand volumes of medical books and journals for items on a particular subject, and that the indexes of such books and journals cannot always be relied on as a guide to their contents. The second was, that there are, in existence somewhere, over 100,000 volumes of such medical books and journals, not counting pamphlets and reprints. And the third was, that while there was nowhere, in the world, a library which con-

tained all medical literature, there was not in the United States any fairly good library, one in which a student might hope to find a large part of the literature relating to any medical subject, and that if one wished to do good bibliographical work to verify the references given by European medical writers, or to make reasonably sure that one had before him all that had been seen or done by previous observers or experimenters on a given subject, he must go to Europe and visit, not merely one, but several of the great capital cities to accomplish this desire.

It was this experience which led me when a favorable opportunity offered at the close of the war, to try to establish, for the use of American physicians, a fairly complete medical library, and in connection with this to prepare a comprehensive catalogue and index which should spare medical teachers and writers the drudgery of consulting ten thousand or more different indexes, or of turning over the leaves of as many volumes to find the dozen or so references of which they might be in search.*

He took his degree in 1860, and when the new college term opened in October he had been appointed demonstrator in anatomy. What his future would have been if the Civil War had not called him offers an interesting speculation. That he would have been at the head of his fellow workers, wherever situated and whatever doing, is certain. That he would have been happy in private practice is doubtful. When the war broke out he was considering a partnership with Professor George C. Blackman of the college faculty, but his powers of exposition, his administrative ability, his instinctive gravitation toward books, his fear-

* *The Medical College of Ohio before the War. Address to the Society of the Alumni of the Ohio Medical College, delivered at the annual Commencement, March 7, 1888. Cincinnati Lancet-Clinic*, 1888, n. s., v. 20, pp. 297–305.

less confidence in his own judgment, his independent opinion and original thinking, all indicate a career different from that of the general practitioner. A surgical specialist? Possibly. Professor in or president of a medical college? It is certain that, whatever his life work, he would have been a leader, would have continued closely in touch with a collection of books.

CHAPTER II

THE CIVIL WAR

THAT young Billings in his student days saw what the gathering political clouds meant for the country and himself is not open to question. That he made up his mind early, that he expressed to few his opinions or his determination, is equally certain. Few men of his age in southern Ohio heard the call unheeded in 1861, and he went to Washington in September of that year for examination for admission to the medical corps of the United States army.

Long after, he told in his *Medical reminiscences of the civil war*,* how the examination lasted three days and made him very uneasy:

> When it was all over Dr. McLaren, the President of the Board, said to me he hoped I would take service at once with him—that he could not get my commission for some time, but that I could be made a contract surgeon without delay. I agreed to this, was introduced to Surgeon-General Finley, got my contract, and was told that I was especially detailed to go to the Union Hotel Hospital in Georgetown, which was under the direction of Surgeon McLaren.
>
> I began service, and had three things with me that none of the other surgeons had: A set of clinical thermometers like those Dr. Keen talked about, a straight one and one with a curve; a hypodermic syringe, and a Symes staff for urethral stricturotomy. The hypodermic syringe was in constant requisition. The clinical thermometer was troublesome and was not used very much.

* *Transactions of the College of Physicians, Philadelphia*, 1905, 3d series, v. 27, pp. 115–121.

In these months he came to know the two people who exercised the greatest influence on his after life. He met Miss Katharine Mary Stevens, daughter of Hestor* Lockhart Stevens, who had been a congressman from Michigan in 1852 and later became a resident of the District of Columbia. John Billings and Katharine Stevens were married September 3, 1862, in St. John's Church, Georgetown, the same church from which he was to be buried half a century later. In these early days of hospital service there came as a patient a young medical cadet from Philadelphia, Mitchell by name. He died despite the tenderness and skill with which Billings cared for him, and his brother, S. Weir Mitchell, in that time of sorrow and anxiety came to know and appreciate the tall, grave, young western surgeon, whose early days had been so different from his own, but whose later days were to be linked to his in "a friendship which lasted without the slightest disturbance and with much mutual benefit" till death parted them.

The change from contract surgeon to officer came on April 16, 1862, when he was commissioned first lieutenant and assistant surgeon. On May 9, 1862, he was ordered to remove the patients and the hospital staff and equipment from the Union Hotel Hospital in Georgetown to the cavalry barracks at Cliffburne, on the hill back of Georgetown, and to transform the barracks—which he described as being in an extremely filthy and dilapidated condition, with no drainage, no sinks, no water within half a mile—into a hospital.

* The name is Hestor, not Hester.

Given a free hand, he soon had the barracks cleaned, ventilating windows in place, drainage and water supply installed, additional buildings and hospital tents set up with other necessary outbuildings. Here he stayed through the summer, being ordered to Philadelphia for duty in the West Philadelphia Hospital, August 18, 1862. The costly peninsular campaign, Fair Oaks in May, the seven days' fighting in June, Malvern Hill in July, Cedar Mountain and Second Bull Run in August, Chantilly in September, put all eastern hospitals to the severest test.

As typical of his experience in these days we may read his letter to Katharine Stevens, written on July 7, after the seven days' struggle before Richmond.

I catch a moment's breathing spell just to let you know that I am alive and that is all. I've received 200 wounded, and have been operating 24 hours steadily, shoulder joints and elbow joints, arms, legs, etc., etc.—glorious opportunity to acquire a reputation and surgical glory but to use C's pet phrase, I am nearly crapulated. Hot—well I should rather think it was—perfectly boiling. . . . Just as I had written thus far I was interrupted by the arrival of 125 more wounded.

His Philadelphia experience lasted from August, 1862, through March, 1863. He was then ordered to report to the Medical Director of the Army of the Potomac and for most of the rest of the year was on active field duty. Chancellorsville was fought the first three days of May, and here he had his first experience of field surgery, operating under fire and back of the lines steadily. Then came two months of in-

action, followed by the slaughter at Gettysburg. Here he was detailed as surgeon in charge of the field hospital of the 2d Division of the 5th Corps. He was attached to the 7th infantry, and accompanied his regiment until it went under fire about 3.30 in the afternoon of July 2, when he established his field hospital near the base of Round Top. He worked all night; early next morning he moved the hospital about a mile to the rear and operated all that day. When the division moved on the 5th he was left behind in charge of the hospital, which then contained from seven to eight hundred wounded.

He wrote to Mrs. Billings on the 6th: "I am utterly exhausted mentally and physically, have been operating night and day and am still hard at work. I have been left here in charge of 700 wounded, with no supplies, and have got my hands full. Our Division lost terribly—over 30 per cent. were killed and wounded. I had my left ear just touched with a ball and Dick's mane was cut in two places." On the 9th he wrote, "I am covered with blood and am tired out almost completely, and can only say that I wish I was with you tonight and could lie down and sleep for 16 hours without stopping. I have been operating all day long and have got the chief part of the butchering done in a satisfactory manner."

He lived through the battle, got his hospital into satisfactory condition, and then, after three weeks of nervous tension and physical exhaustion, was forced to apply for thirty days' sick leave. Rest and quiet at home in Georgetown brought restored health, and

when the 7th was ordered to New York City in August because of the draft riots he rejoined his command on the 16th. He spent the next six months in various hospitals in or near New York. The tedium, monotony, narrow horizon of the daily routine of life in an army post wore on him; his letters made constant reference to it. "I suppose I might as well get used to the monotony and idleness of post life, for when this cruel war is over it will become my usual mode of existence. . . . The great weapon I have always wielded against ennui has been reading and study, but that seems to have lost its efficacy" (September 25, 1863).

It was therefore most unquestionably a relief when in February, 1864, while at Bedloe's Island, he received orders to report on board the ship Marcia C. Day, at anchor in the harbor. Once on board he found that the hold had been cleared out and equipped with rough two-story bunks, and that the cargo included boxes of drugs and surgical instruments addressed to Assistant Surgeon John S. Billings, U. S. A., Isthmus of Panama. His orders directed him to sail to a certain point east of Florida and there open sealed orders. When these were opened he was directed to sail to a point half way between the west end of Haiti and the east end of Cuba, where he was to open another set of sealed orders. These in turn ordered him to go to the Ile à Vache, on the south coast of Haiti opposite Aux Cayes, and there take on board a colony of negroes from Virginia who were now to be returned to the United States.

These negroes had been sent down in 1863 as part of a government scheme for settling freedmen in Haiti, Liberia, and similar places. Bernard Kock, "an irresponsible and untruthful adventurer," had contracted with the government to colonize 5,000 negroes on the Ile à Vache at $50 per head, agreeing to provide food, shelter, and employment. He had succeeded in securing financial help in New York and Boston, but when his supporters came to know the character and calibre of the man, his contract was cancelled. The colonists were left leaderless and soon came to lack the common necessities of life. On behalf of the Secretary of the Interior, Billings and the Marcia C. Day were sent to bring them back. They sailed from the island on March 4 and reached the Potomac and Alexandria on March 20, 1864.

On his return he was relieved from the Department of the East and ordered to the Army of the Potomac, thus securing active field duty once more. For the next four months he had thoroughly congenial work, serving as Acting Medical Inspector of the Army. He described his duties in his letter home April 17, 1864, as follows: "My duties here are gradually becoming defined—I am to be what you might call the Medical Statistician of the Army of the Potomac. I am to collect and consolidate all sorts of reports—and when a battle comes off I am to wander round from Hospital to Hospital collecting records—overseeing the surgery in an unofficial way—and noting down items. When the Army begins to move I shall wander about like a newspaper reporter."

In these four months he lived through the battles of the Wilderness and Spottsylvania in May, Cold Harbor and Petersburg in June, some of the bloodiest and most costly fighting of the war. By July a partial paralysis of his left leg made further field service impossible and he was granted twenty days' sick leave on July 26. He went to Washington, secured extension of the leave, and on August 22 was relieved from field duty and detailed to office duty in Washington with the Medical Director of the Army of the Potomac for the arrangement, analysis, and discussion of field reports. On December 27, 1864, he was transferred to the Surgeon-General's Office, where he remained until his retirement thirty-one years later.

CHAPER III

THE SURGEON-GENERAL'S OFFICE

IT is interesting and not a little amusing to think how young Billings—he was then all of twenty-five years old—tried to reconcile himself to the prospect of the monotonous and idle life of an army post, which he anticipated as his usual mode of existence after the war. We must remember that these forebodings* came to him on a drizzling, rainy September day, when dismal prospects and forecasts are not without extenuation. That monotony and idleness would be distasteful to him is certain; that neither would affect his mental alertness, his eager search for information and knowledge, his habits of mental retrospection and speculation, is likewise most certain. If he had not been the man he was, with the mind he had, the thirty years in the Surgeon-General's Office might have been fully as monotonous, quite as desiccating, as life at the dreariest, most remote army post.

His routine duties for the first few years were by no means inspiring. The official record states that he was in charge "of the organization of the Veteran Reserve Corps, of matters pertaining to contract physicians, and to all property and disbursing accounts," but this, though accurate, is inadequate, not to say misleading. One of the most suggestive accounts of those early years is contained in Brigadier-General Alfred A. Woodhull's tribute to his friend and fellow worker, in the *Journal of the Military Service Institution* for November–December, 1913:

* Garrison, p. 69.

This unique experience [in the Surgeon-General's office for thirty years] was due to the peculiar ability with which he discharged all the varied duties placed upon him in curious succession. In that great war the Medical Department, besides its central strictly professional service, was charged with numerous associated but heterogeneous functions. There was a huge corps of civil physicians under contract for certain professional duties, some of which were in the great interior hospitals, some in the fringing line of field reserves, some on the medical transports, some actually at the scene of action, and all under the Surgeon-General's ultimate control, and whose number might be increased or diminished at his pleasure. That subdivision was given to Billings to manage. Pure business, in principle like the purchase, distribution, and care of the property of a vast commercial concern, but in quantity sufficient for the hospital requirements of a million men, and the administration of huge appropriations, also were necessary parts of the Medical Department's work, and by degrees the supervision of these also became his additional province. When the armies were disbanded the great hospitals were discontinued and dismantled, and the settlement of many such accounts and the clearance under the regulations of the Treasury of nearly all the non-continuing appropriations, seemingly a distasteful and incongruous duty, he was required to assume. His days were filled with routine office work, with questions of bookkeeping and pecuniary responsibility, with the supervision of clerks and balances, indispensable, but not alluring to a mind interested in problems of military medicine. He accepted it soberly as belonging in the day's work. It was his disposition to do with his might what his hand found to do, and this had been entrusted to him. For the time, contract surgeons and property accountability became his vocation, and he followed that vocation carefully. It showed that he had

the natural qualities of a good superintendent and business man, it showed him to be discreet, firm, and to respect the responsibility involved in money entrusted to his official care, but not to mistake parsimony for economy. This practical work also profited him all his life.

His avocation was microscopy. This was not allowed to interfere with the arid drudgery among invoices and receipts, requisitions and bills of lading, treasury drafts, and auditors' decisions. But his leisure, the hours that were his own, were taken up with eye-pieces, lenses, slides, cover-glasses, media and stains, as connected with the hitherto invisible marvels of life just coming into scientific recognition. He grew skilled in the observation and interpretation of that great division of knowledge, and, given official charge of such work, he would have become an authority in it. But as it is, probably not an officer now on the active list has ever thought of him as having been a microscopist. About this time, while he was supervising accounts on duty and working with the microscope off duty, he taught himself German and the latest pathology based on the revelation of that instrument, by spending winter evenings with a new and difficult German text-book and a dictionary. . . . It was his ability to grasp the essentials and to discard the accidents of a situation, his broad and discriminating knowledge, and above all his extraordinary and intelligent industry, that enabled him to cover many lateral fields without neglecting official obligations.

The three great things in his life after the war were the development of the Surgeon-General's Library and its catalogues, the planning of the Johns Hopkins Hospital, and the directorship of the New York Public Library, two of which are of exceeding interest in considering him as a library pioneer. To

these tasks, any one of which would have satisfied a normal man, he added achievements in fields so widely remote as to make one wonder at the reliability of the record. His good fairy had, however, given him a fondness for work, the faculty of accomplishment without apparent effort, a refusal to be balked at undertaking a task because it seemed too large or the end too remote. What came to hand was done well, with an originality and finality that encouraged the suggestion of further tasks.

This is not the place for full consideration of all his activities in these years. Space for one thing is lacking, and, moreover, Dr. Garrison has done it too well in his admirable memoir to justify either taking the result of his labor or making a new survey from the original documents. It is unfair, however, to dismiss his activities with nothing more than general statements; recital alone, however bald, gives an impressive sense of the man's versatility, wide learning, abiding common sense.

His first extra-routine contribution to science, after the war, was a *Report of the results of the examinations of fluids of diseased cattle with reference to presence of cryptogamic growths*, made by Dr. Edward Curtis and himself in 1869. Closely akin to this and showing the development of his interest in microscopy are papers on *The study of minute fungi* (1871), *The genus hysterium and some of its allies* (1871), and *On some minute fungi* (1872). These mark the limit of his productive interest in the microscope.

In 1870 he published as Circular No. 4 of the

Surgeon-General's Office *A report on barracks and hospitals; with descriptions of military posts*, followed in 1875 as Circular No. 8 by *A report on the hygiene of the United States army; with descriptions of military posts*. In 1874 he contributed to the papers read at the annual meeting of the American Public Health Association an *abstract of the special reports by army medical officers on the effect of mountain climates upon health*, and *Notes on hospital construction*. His *Bibliography of cholera*, contributed to the government report on *The cholera epidemic in the United States* (1875), brings him back to the field of books from which he might seem to have strayed.

In 1869 he was detailed by the War Department for inspection on behalf of the Secretary of the Treasury, of the Marine Hospital Service throughout the country. This took him to all seaports on the Atlantic, Gulf, and Pacific coasts, and to all important Lake-ports in the interior. As a result of his inspection and of the reorganization plans he submitted, the service was freed from the incumbrances grafted on it by time, tradition, and politics; a reasonable and adequate administration was adopted; and after he was relieved from active supervision in 1874, he had the satisfaction of seeing it develop in fashion and form much as he had planned.

In March, 1875, with Drs. Norton Folsom, Joseph Jones, Caspar Morris, and Stephen Smith, he was selected by the trustees of the Johns Hopkins Hospital in Baltimore to submit designs for the hospital they planned to erect from funds left them by the Balti-

more merchant, who had died December 24, 1873. Dr. Billings's suggestions were deemed the best, and for the next thirteen years he served as adviser to the trustees. He made one trip to Europe on their behalf in October–December, 1876, inspecting hospitals in England and on the Continent. He worked constantly with the trustees and their architect, submitting numerous reports as the work progressed. The physical arrangements were due almost entirely to him; serving also as superintendent until the appointment of Dr. Hurd in June, 1889, his influence was strong in the establishment of administrative routine; and to his credit must go the choice of Drs. Welch, Osler, and others who helped make the brilliant staff. The hospital was opened May 7, 1889, and a year later Dr. Billings's *Description of the Johns Hopkins hospital** was published, a work that ranks as a classic in the field of hospital construction, engineering, sanitation, ventilation, administration. At the Billings memorial meeting held at the hospital May 26, 1913, Dr. Hurd said that "these plans influenced hospitals in a way unparalleled in the history of hospital construction," and gave "a tremendous impetus to better hospitals by directing the attention of medical men, sanitarians, and others to the absolute necessity of certain great essentials, viz., more perfect ventilation and heating and the prevention of contagion."

After this experience it was natural that he should be called in consultation for other hospitals under construction, such as the Memphis and Princeton build-

* Printed at Baltimore by I. Friedenwald, 3 p. l., 3–116 pages, 56 pl. 4°.

ings. As late as 1905–8 he worked on the plans and general administrative organization of the Peter Bent Brigham Hospital in Boston.

His interest in sanitation and public health led him to take an active part in the affairs of the American Public Health Association. Following the Philadelphia meeting of 1874, he submitted at the Baltimore meeting of 1875 a *Report of the committee on the plan for a systematic survey of the United States*, adding as an appendix his own *Remarks on medical topography*. At the Boston meeting of 1876 he gave an address on *The rights, duties, and privileges of the community in relation to those of the individual in regard to public health.*

When the National Board of Health was founded in 1879 he was appointed Vice-President. The board had ample opportunity to test its powers in the yellow fever epidemic that scourged Memphis, Tennessee, in the summer of 1879. In November of that year he was the moving spirit in an investigation of the sanitary condition of Memphis, and made the survey and urged his recommendations so successfully and so tactfully that the local newspaper said: "Dr. Billings's visit was a moral tonic, which has invigorated and strengthened every one engaged in the work of rehabilitating the Bluff City."

He served as President of the American Public Health Association in 1880, and his address at the eighth annual meeting of the association in New Orleans, December 7, 1880,—well worth reading a generation or more later,—is convincing demon-

stration of his ability as a pioneer in the field of public hygiene. In various papers at this time he labored manfully to bring before the public the work of the National Board of Health, the importance of the scientific work carried on under its direction, and the need of national sanitary legislation. The board had done good work, but public interest lessened, local jealousies grew stronger, Congressional appropriations were cut off, and the board died at the early age of seven.

From questions of sanitation the step to medical statistics was easy. Though he had no formal training in the science, statistics and statistical methods came readily to a mind as acutely critical and analytical as his. It was, for instance, very largely because of his suggestion that Herman Hollerith developed his electrical calculating and integrating machines, now so largely used in statistical work. For the eleventh (1880) census he made *Suggestions with regard to incorporating in the approaching United States census statistics of diseases as well as deaths*, and he edited the three-volume *Report on the mortality and vital statistics of the United States as returned at the tenth census* (Washington, 1885–86). As chairman of the committee he made to the National Board of Health in 1880 a report *on the nomenclature of diseases and on vital statistics.*

In the next decade he had several papers on the mortality statistics of the tenth census, on vital statistics in general, studies of the mortality rates of Baltimore (1883), *Forms of tables of vital statistics, with special reference to the needs of the health department*

of a city (1888), and delivered the Cartwright lectures *on vital and medical statistics* before the Alumni Association of the College of Physicians of New York in November, 1889. His power of clear exposition and interpretation is admirably shown in his remarks on *The United States census in its relation to sanitation* (1890), and his paper on *The relations of the physicians of the United States to the next census* (1890).

As a result of the eleventh census he made several studies in vital statistics. That on the Jews in the United States appeared in 1890; *Social statistics of cities* in 1891; *Vital statistics of the District of Columbia and Baltimore*, 1884–90, in 1893; similar studies for New York City and Brooklyn appeared in 1894, for Boston and Philadelphia in 1895. The *Report on the insane, feeble-minded, deaf and dumb, and the blind* came out in 1895; on the social statistics of cities in 1895; on the vital and social statistics of the United States in 1894–96, four large volumes of over one thousand pages each.

For the twelfth census (1900) his other work left him no time for anything but a discussion of the vital statistics, issued in 1904 as Bulletin No. 15.

At the tenth international medical congress, held in Berlin in 1890, he read a paper on the problem: *Can the reports of the sick and the sanitary statements of the different armies be arranged according to a scheme essentially uniform for the purpose of gaining statistics of scientific worth for comparison of diseases, wounds, and deaths in times of peace and war?*

Not content with swinging from medicine and medical bibliography into the field of public health and thence to vital statistics, this versatile mind began in 1879 a series of *Letters to a young architect on ventilation and heating*, published in various issues of the *Plumber and Sanitary Engineer* of New York, and its successor *Sanitary Engineer and Construction Record*. They were reprinted in book form in 1884 with title *The principles of ventilation and heating and their practical application*. The work went to a second edition in 1893, entitled *Ventilation and heating*.

In the last two decades of the nineteenth century he wrote frequently on related topics: *Patents on ventilating apparatus* (1880), *On the ventilation of the House of Representatives* (1882), *The information necessary to determine the merits of the heating and ventilation of a school building* (1882), *House sanitation in large cities* (1882), *The heating and ventilation of a school building* (1882), *Sewage disposal in cities* (1885), *Hot water and steam heat compared* (1886), *Water supply for small towns* (1888), *House drainage from various points of view* (1888), *Municipal sanitation defects in American cities* (1893), *Municipal sanitation in Washington and Baltimore* (1893), *Municipal sanitation in New York and Brooklyn* (1893), *Water supply and sewage disposal in some large European cities* (1894), *The health of Boston and Philadelphia* (1894), being a selection of titles sufficiently indicative of the breadth of scope and ability the man enjoyed.

Though these excursions into other fields seemed

to take him far from the home grounds of medicine, medical literature, and medical bibliography, we must not forget that his chief interest still remained with the healing art. The centennial celebration of 1876 of course called forth surveys of American progress in every field. Billings furnished two contributions: the first, *A century of American medicine, 1776–1876: literature and institutions*, was published as part of a volume entitled *A century of American medicine*, published at Philadelphia in 1876. The second formed part of the special report on public libraries in the United States, issued by the Bureau of Education in 1876, and was entitled *Medical libraries in the United States*. Both are critical, both are clear and final bits of exposition, and both repay most royally the enquirer curious to know what the writer meant to say, or what kind of a man wrote them. To the first we can here give no more than passing mention; the second deserves fuller consideration in a later chapter.

About this time he began to give a series of lectures at Johns Hopkins University on the history of medicine, medical education, and medical legislation (1877–78), of which extracts on "medical education" were printed in 1878; but the greater part never got beyond the manuscript notes or his hearers' memory of the decided charm of the speaker's voice and platform manner.

What he called "journal articles," contributions to periodicals, were as numerous in the field of medicine in this period as in related branches of science. *The medical journals of the United States* (1879), *Notes*

on military medicine in Europe (1882), *The vaccination question* (1882), *Medical bibliography* (1883), *Germs and epidemics* (1883), *Effect of freezing on the typhoid germ* (1886), *Methods of research in medical literature* (1887), *Medical museums, with special reference to the army medical museum at Washington* (1888), *The history of medicine* — an introductory lecture in the Lowell Institute series — (1888), *Ideals of medical education* (1891), *American inventions and discoveries in medicine, surgery, and practical sanitation* (1891), *The causes of outbreaks of typhoid fever* (1892), *Prevalence of consumption in the United States* (1892), *Effects of his occupation upon the physician* (1893), *Medicine as a career* (1893), *Methods of teaching surgery* (1894), *A report on the etiology and vital statistics of diphtheria and croup* (1894), *The king's touch for scrofula* (1896), *The military medical officer at the opening of the twentieth century* (1903), show how closely he followed the medical thought and progress of his day. It is a cause of real regret that space forbids typical extracts from some of these papers, to show how delightfully clear were his powers of statement and explanation, how abiding his common sense.

To the more formal field of medical literature as contained in books he made several contributions. In 1879 he supplied the *Introduction on hygiene* to A. H. Buck's *Treatise on hygiene and public health*. In 1890 he edited *The national medical dictionary*, published at Philadelphia in two royal octavo volumes. In 1893 he supplied the chapter on hygiene in Pepper's *Text-*

book of theory and practice of medicine. In 1895 he wrote an authoritative and most interesting survey of *The history and literature of surgery* for Dennis's *Systematic surgery*. As one of the Committee of Fifty for the investigation of the liquor problem he edited the *Bibliography (preliminary) of the literature on the physiological and pathological effects of alcohol and alcoholic drinks* (1894), and in 1903, with Drs. Atwater, Bowditch, Chittenden, and Welch, edited two volumes on the *Physiological aspects of the liquor problem*. With Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, he issued in 1895 *Suggestions to hospital and asylum visitors*, a little forty-eight page booklet that furnishes one more tribute to his gift of sympathy, exposition, appreciation.

The celebration of the completion of the first fifty years of the Smithsonian Institution gave him opportunity to estimate *The influence of the Smithsonian Institution upon the development of libraries, the organization and work of societies, and the publication of scientific literature in the United States* (1896). To *The nineteenth century: a review of progress during the past 100 years in the chief departments of human activity*, which appeared first in the *Evening Post*, of New York, and later was issued in book form by G. P. Putnam's Sons, he contributed the survey of *The progress of medicine*.

Though he did little with the microscope after his first few years in the Surgeon-General's Office, he never lost his interest in the instrument; his studies with it led him to photomicrography, and from that

to composite photography as a means of scientific investigation was not a far step. To the Cotton Centennial Exposition in New Orleans in 1884 the Surgeon-General's Office and the Army Medical Museum sent a selection of specimens, microscopic preparations, and composite photographs of crania, for which Dr. Billings furnished the accompanying descriptions. The same kind of material was sent also to the Columbian Exposition at Chicago in 1893. Several contributions to scientific publications during the eighties show his interest in this field.

Such a productive mind could not long remain known only on this side of the ocean. The first tribute from abroad came in 1881, when he was invited to give an address before the International Medical Congress to be held in London in August. He was the first American physician to be so honored, and his address (August 5) on *Our medical literature* set a difficult standard for his followers to surpass. He read also before the section of state medicine at this same congress a report on *The experience of the United States in recent years with regard to Asiatic cholera and yellow fever*, and took part in the work of the section on military medicine.

After the congress he made an extended trip on the Continent—he had been over in 1876 for the Johns Hopkins Hospital—for furthering the work of the Surgeon-General's Library, investigating medical libraries and museums, and studying the methods of obtaining and compiling vital statistics.

In 1884 he was abroad again, this time to receive

the degree of LL.D. at the celebration of the 300th anniversary of the University of Edinburgh. James Russell Lowell and he were the representatives of this country in a company of the most distinguished scholars of Great Britain and the Continent. In 1886 he gave the annual address in medicine before the British Medical Association at Brighton, speaking on *Medicine in the United States, and its relations to co-operative investigation*. Three years later he sailed again, to receive the degree of D.C.L. at Oxford in June, 1889. The next year he gave his address on military medical statistics before the International Medical Congress in Berlin. In 1892 he was called to Dublin to receive the honorary degree of M.D. at the Dublin University tercentenary celebration and to be made honorary fellow of the Royal College of Surgeons of Ireland. That he should have received degrees from Scotch, English, and Irish universities was the source of no little satisfaction to him. He was in England again in 1894, when he spoke before the University Extension Classes at Oxford, August 7, on *Hygiene in university education*. Another two years and he sailed with Professor Simon Newcomb to represent this country at the International Conference on a Catalogue of Scientific Literature, held at London, July 14–17, 1896.

CHAPTER IV

THE MEDICAL LIBRARIAN AND BIBLIOGRAPHER

THE gravitation of John Billings to books was as inevitable and as certain as any law of nature. It was equally certain that, given access to books, he would know their contents, use them, and introduce others to their solace and help. Detailed to the Surgeon-General's Office and finding no library, he made one.

That he and no one else was founder of the national medical library needs no discussion after reading the following letter, printed in *The Medical Record*.*

Washington, February 3, 1880

To the Secretary of the Medical Society of the County of New York

DEAR DOCTOR: As my attention has several times been called to the communication by Dr. Wm. A. Hammond relative to the library of this office, read at the annual meeting of the Society, October 27, 1879, and more especially to the report of this communication given on page 472 of the New York *Medical Record* for November 5, 1879, with requests for explanations, I deem it proper to make a statement on the matter to the Society.

From the report in the *Record*, some have inferred that I claim to have been the founder of the National Medical Library, although the letter of Dr. Hammond, as printed on page 40 of the minutes of the meeting, makes it very plain that I have made no such claim.

The facts of the case are simply as follows:

For many years there was a small collection of medical books and journals in the Surgeon-General's Office

*New York, March 13, 1880, v. 17, pp. 298–299.

at Washington, which collection was commenced by Surgeon-General Lovell prior to 1836.

At the commencement of the war this collection amounted to between three and four hundred volumes.

Dr. Hammond entered on his duties as Surgeon-General April 28, 1862, and left Washington August 30, 1863, after which date he was not on duty in this office. During this interval three hundred and fifty-nine volumes were purchased for the use of the office, the principal works being a set of the *Annales d'hygiène* and a set of the *Boston Medical and Surgical Journal.* During the years 1864 and 1865, about 1,000 volumes were added to the library, mainly selected by Drs. Woodward and Otis.

When the library came under my charge, in the fall of 1865, it contained, as shown by a catalogue made at the time, about 1,800 volumes. At this date it contains about 50,000 volumes and 60,000 pamphlets.

Very respectfully and truly yours,

JOHN S. BILLINGS,
Surgeon, U. S. Army

He was not formally assigned to "the charge of the museum and library division" of the Surgeon-General's Office until December, 1883,* but his own statement above and the universal opinion of contemporaries show that he was the first librarian and that his personality guided the development of the library. In those days it must have been no easy task to secure appropriations for the purchase of books. Reconstruction was more important to the Congressional mind than any medical library conceivable. "Fortunately at the close of the war in 1865, the hospitals turned

* Alfred A. Woodhull in *Journal of the Military Service Institution* (1913), v. 53, p. 335.

in to the Surgeon-General's Office something like eighty-five thousand dollars of their savings, and this he was allowed to use for the library, which then began to grow under his fostering care."*

With this fund free from Congressional limitations he was doubtless able to secure at an early date the larger part of medical books—as distinct from periodical publications—that would be needed for the skeleton of the great organism he had in mind. It seems probable that this phase of collecting was completed within the first six to eight years, for in 1878 he wrote that "for the last four years the purchases for the library have been mainly of medical periodicals, and it now has the largest and most valuable collection of these in existence, amounting to between eight and nine thousand volumes, or more than seventy-five per cent. of all that have ever been published. Every important medical journal now in course of publication in the world is taken by the library."†

He always had a firm conviction that gifts were one of the most important elements in the growth of any library. At the dinner given in his honor at Philadelphia, November 20, 1895, Dr. James R. Chadwick, of Boston, said that

> His knowledge of men and his ability to secure their enthusiastic co-operation form the secret of much of his power. For instance, he not only despoiled my private library of many of its treasures in the early days of our

*S. Weir Mitchell in the *Bulletin of the New York Public Library* (1913), v. 17, p. 515; also in *Science* (1913), n.s., v. 38, p. 830.

†*Library Journal*, New York, 1878, v. 3, pp. 107–108.

acquaintance, but persuaded me to listen with equanimity, when, as at the dedication of the medical library in Boston, he boasted of the fact publicly, and intimated that the experience had doubtless proved a valuable object-lesson for me as a librarian. Mr. Thomas Windsor, formerly librarian of the Manchester Medical Library, in England, is another who has succumbed to his wiles, and from the beginning has sent box after box of medical rarities culled from his extensive private library, and this, despite the fact that he is the most inveterate collector and reader of books, and has a more intimate knowledge of their value than any living man. We are but types of his many victims.*

One of the first of his "victims" when he came to the New York Public Library, and one of his closest friends among the trustees of that library, John L. Cadwalader, had himself photographed with Dr. Billings, he leaning back in his chair with an air of complaisant resignation to the inevitable and the doctor leaning forward with right hand pointing vigorously and emphatically to the book held in his left. Below the print Mr. Cadwalader wrote: "The Making of a Library. Dr. Billings *Loq.*—'Now somebody *must* GIVE us those books.'" No doubt he learned at an early date that the surest way to force an interest in a library is to induce a gift of books and then persuade the giver to develop his initial act into a habit. Tributes to his ability in this respect are easy to find.

His powers of exposition and persuasion were sufficiently convincing with his superiors in the War Department and with the Congressional committees

* Garrison, p. 285.

on appropriations to permit him to characterize the library in 1876 as "an excellent foundation for a national medical library that shall be worthy of the name, and put the writers and teachers of this country on an equality with those of Europe so far as accessibility to the literature of the subject is concerned."* He went on to say:

> It has been formed within the last twelve years, and is of course too young to contain many of the incunabula or the books noted as rare and very rare, which are the delight of the bibliomaniac; nor, indeed, has any special effort been made to obtain such. Yet there are few of the ancient authors whose works it does not possess, although not always in the most desirable editions. It is comparatively full in American, English, French, and German medical literature of the present century, and in works relating to surgery, pathological anatomy, and hygiene. Of the early medical literature of this country, that is, prior to 1800, it has but little. It possesses a few valuable manuscripts, the oldest of which is a fine copy of the *Lilium Medicinae* of Bernard de Gordon, dated 1349.

The 1876 report continues with the routine of the administrative work of the library. The catalogue was on cards seven by five inches in size, authors, subjects, and anonymous works in separate alphabets. The subject catalogue was formed from the cards used for the 1873 printed catalogue of authors; a supplementary catalogue including subject entries for accessions since that date. The subject catalogue included cards for original papers in medical periodicals. This indexing of articles in medical periodicals began in

* Bureau of Education, *Special Report on Public Libraries*, 1876, p. 175.

1874, and included back files as well as current issues. He ranked periodical publications first in importance, then theses and inaugural dissertations. He gave due attention to pamphlet material, and considered text-books last. The "pamphlet problem" was treated at length: bound volumes of pamphlets were classified by subject and numbered consecutively; specially rare or valuable pamphlets were bound separately; the remainder were kept in boxes made of walnut, with no top and a sliding rear end that could be fixed at any point. The boxes were "arranged on shelves suited to their height, thus preventing the admission of dust."

He made no mention of a shelf list, and was content to keep accession records to the minimum. The classification was necessarily adapted to that particular collection and, like the catalogue, bore many evidences of his personality.

The subject index was one of the most helpful characteristics of the library. Other bibliographers had made indexes to medical periodicals; other bibliographers had listed medical books. But not till the *Specimen Fasciculus* of 1876 appeared had any medical library catalogue included in one alphabet titles of books and of periodical papers of current and former dates. As we see it now, the arrangement seems very simple, sane, and satisfactory. This solution of the problem was not so obvious, however, fifty years ago, and Billings reached it only after prodigious labor, countless experiments, careful consideration of the opinions and suggestions of others, constant thought on his own part.

When he was buying old files of periodicals the stream was too great to be handled as part of the day's work, and army wagons took great loads of these volumes from the library to his home. Here he went through them at night, page by page, marking by pencil ticks the articles to be indexed by the clerks when the volumes were returned. After the checking and indexing of these back files were completed, if his earlier habits resembled in the slightest those of his later years, it is certain he seldom left his desk at night without booksellers' catalogues or some similar instruments of what was both vocation and avocation tucked away in his pocket.

In the early days, his clerks and assistants in the library were hospital orderlies who had served during the war and now were detailed to the making of catalogues instead of caring for patients. The quality of the work they turned out is a tribute to the directing ability of Dr. Billings. He always spoke most appreciatively of the faithful, sympathetic, and intelligent interest those assistants took in their work and in his efforts to develop the library. Not all his assistants were untrained, however. Dr. Robert Fletcher, a Briton by birth, a scholar by instinct, a volunteer surgeon during the Civil War, a collaborator on the Provost-Marshal's *Statistics, medical and anthropological*, of the Civil War, was assigned to the Surgeon-General's Office in 1876, after the publication of Dr. Baxter's anthropometric statistics was completed. He worked with Dr. Billings in great harmony, and their friendship continued through life. In the pre-

face of volume 1 of the *Index-Catalogue*, Dr. Billings was careful to speak of Dr. Fletcher's help, "without which I should have found it impossible to have done the work, and to have performed my other official duties," and when he took his leave of the work, in the preface to the 16th (and concluding) volume of the first series, he emphasized again the importance and value of Dr. Fletcher's assistance.

Dr. Billings frequently insisted he was "no book collector," and in a sense he was correct. He undoubtedly brought together one of the greatest collections of medical books in the world. But if he had been a "book collector" and no more, he might have stopped short with that achievement, stopped with credit. At this point, however, stands out the difference between Billings and Spofford, then librarian of Congress. The one was static, the other dynamic. Spofford was content with a passive development of the Library of Congress; Billings not only made the Surgeon-General's Library one of the great collections of medical books, but by his creation of an index to its contents he made it an active instrument for the increase of medical learning. In his address at the annual commencement of the Ohio Medical College in 1888, he gave a very full statement of how he had come to feel the need of a great medical library and of the ideals toward which he had worked in developing the Surgeon-General's collection. Such a library, without a catalogue, would of course have been useful, but an adequate index of its contents increased its usefulness beyond measure. The *Index-Catalogue* conceived and

executed by Dr. Billings is emphatically such an index, and it is also a most important contribution to library economy.

There had been printed catalogues of the Surgeon-General's Library before it came under Billings's care. One had been issued in 1864, dated May 10, a twelvemo of 27 leaves, printed on the recto alone with verso blank. The entries were grouped in nine classes. A year later, October 23, 1865, another catalogue was printed, very similar to the earlier issue, 32 leaves, the titles in eleven classes. A third was issued June 12, 1868, an octavo of 147 pages. These three were printed in single columns with a page about 22-ems wide. Each title bore a number at the end, indicating without doubt that the books were classified in order of receipt, following the sapient advice of Jared Bean.

In 1872 a fourth catalogue was printed: the preface is unsigned, but could have been written by no other pen than that of Dr. Billings. The catalogue is a royal octavo, of two 14-em columns, hanging indention, of the same type and appearance as the catalogues of the Library of Congress printed about this time. The type is an eight-point modern face, author entries in black face, imprints in italics following the collation. This has an "index of principal subjects" on pages 433–454, consisting of a subject entry in black face followed by a list of authors' names. It is very similar in character to the subject index Cogswell appended to his 1866 supplement to the catalogue of the Astor Library. The prefatory "memorandum" explains

that "the alphabetical index of subjects is not intended to be complete. It includes only works readily classified, and subjects relating to which two or more works are in the library. Prepared and printed within six months, to meet a want which daily became more pressing, errors have been inevitable, especially those of omission. It is hoped that a corrected and much enlarged edition will be needed and can be prepared within a very few years."

When his next essay appeared, it was evident that Billings had forsaken the Library of Congress style for something more nearly akin to the Royal Society catalogue of scientific papers. The *Specimen fasciculus of a catalogue of the national medical library, under the direction of the surgeon-general, United States army, at Washington, D. C.*, appeared in 1876.* This sample was issued, as the transmitting letter of February 1, 1876, states, "to show the character and scope of the collection, to obtain criticisms and suggestions as to the form of catalogue which will be most acceptable and useful, and to furnish data for the decision as to whether it is desirable that such a work should be printed and distributed."

The text was printed in eight-point (brevier) roman, with six-point (nonpareil) for notes. Authors and subjects were combined in one alphabet. In some cases author entries were set in italic capitals for the family name and italic capitals and lower case within parentheses for the given name; on other pages roman capitals were used for the family name and capi-

* vi, 1 l., 72 pages, roy. 8°.

tals and small capitals for the given name. The subject entries were set in eight-point black face capitals, with a choice of italic capitals and small capitals. Imprints were given in italics. The page consisted of two 16-em columns.

The letter of transmittal gave a very interesting statement of the problem, pointed out that the two main questions had to do with a single combined alphabet of authors and subjects or a separate alphabet for each; and with the principle of classification of subject entries. It brought out the importance of articles in periodicals and stated that about 5,000 volumes had been analyzed for this purpose. Then followed paragraphs emphasizing the national character of the collection, pointing out that the catalogue if printed would indirectly benefit the whole country, "since the general knowledge and skill of the medical profession became a matter of personal interest to almost every individual at some time during the course of his life."

In an article in the *Library Journal* for May, 1878, Dr. Billings stated, apropos of the *Specimen*, that the subject cards numbered about 400,000; the subject catalogue alone would make seven volumes, royal octavo, of about 1,000 pages each; the author catalogue would make three additional volumes. He went on to say:

> The question for Congress to decide is as to whether the result would be worth the expenditure, and the answer should come, not from the depths of the internal consciousness of the members, but from a consideration of

evidence. This evidence can be obtained from physicians and librarians, yet neither class alone would probably, at first sight, see all the bearings of the question. Into its discussion should enter the facts about the low condition of medical education in this country, and the part which government should or can take with regard to its improvement; the peculiar value which a case of disease well observed a hundred years ago still has, as presenting phenomena which cannot be repeated at will, like those of a chemical experiment, and sundry other points more or less familiar to medical men. . . .

The *Specimen fasciculus* of the proposed catalogue has now been for some time in the hands of most libraries —they are experts in this matter, and it would be well if they should express their opinions to Congress. Should the catalogue be printed as proposed? Or should the authors be omitted, thus saving three volumes? Is it desirable that a cheaper style of publication be adopted? What is the value of such an index to the people of the United States as compared with an expedition to the North Pole, five miles of subsidized railroad, one company of cavalry, or a small post-office building?

For reasons hinted at in the commencement of this article, minor criticisms as to capitalization, methods of collation, etc., are deprecated at the present time; no doubt the style adopted might be improved. Let us hope that it will be, and that, if the work is published, every one will find that his own plan has been followed; but just now the question is: Should the catalogue be published at all?

Congress was convinced at length, and *The Medical Record* of March 15, 1879, announced inclusion in the pending sundry civil bill of the initial appropriation of $20,000. The first volume appeared in

1880, with title *Index-Catalogue of the library of the surgeon-general's office, United States army. Authors and subjects.** The letter of transmittal was dated June 1, 1880. It pointed out that the form adopted was the result of careful consideration of the criticisms and suggestions brought out by the fasciculus of 1876; that titles for subjects were those for which an educated English-speaking physician might reasonably be expected to look; that cases of doubt were cared for by cross references; that the English form was preferred when both an English and foreign form of name were in common use; that substantives, rather than adjectives, were selected for subject headings, with few exceptions; that local diseases or injuries were entered under the name of the organ affected; that cases in which one disease is complicated with another are placed under the name of the first; that a given remedy is entered under its own name when considered in general, but under the name of a disease when the article considered it solely with reference to that disease; that the amount of subdivision depended on the amount of material; that references were made from general to specific heads, not the reverse; specified the subdivision of material about a given organ; explained that anonymous works were entered under the first word not an article, that Greek names were transliterated and Russian and Japanese titles transliterated and translated; that original articles in periodicals were indexed, but not reprints. A list of abbreviations of titles of periodicals indexed was prefixed.

* vi, 126, 888 pages, roy. 8°.

Between the 1876 Specimen and the Catalogue as issued four years later in final form the typographic differences were slight. In the Catalogue the subject headings are set in ten-point black face capitals and lower case, author entries in eight-point black face capitals and lower case for family name, roman capitals and lower case for given name. Author entries under subject headings appear in roman capitals and small capitals rather than italics. Minor changes were made in the six-point notes. The 16-em columns were retained, and the general appearance of the page was kept much the same.

With foundations so carefully laid, this first volume was received with the welcome it deserved. Others followed regularly, the first series of sixteen completing the alphabet in 1895, just as Dr. Billings was retiring from the army. The second series was carried on by his successors, and the alphabet was finished with volume 21 in 1916,* at which time the library contained 224,522 volumes and 337,120 pamphlets, 561,642 pieces in all. When he took it over in 1865 there were about 1,800 volumes. In 1876 he reported 40,000 volumes and 40,000 pamphlets. When he retired in 1895 the number had grown to 308,445 pieces.

The *Index-Catalogue* Dr. Billings always insisted was not a medical bibliography, but merely an index to a particular collection. So competent a critic as Sir William Osler, however, declared at the memorial

* This volume contains an elaborate historical and statistical summary of both series, volumes indexed, persons engaged on the work, etc.

meeting that, "while the Catalogue only represents the contents of the Surgeon-General's Library, it really is an exhaustive index of medical literature. So general were Dr. Billings's interests that all departments of medicine are represented, and there is not a subject, as there is scarcely an author of note, ancient or modern, not in the Catalogue." He characterized the Catalogue most aptly as combining "the two essentials of a good bibliography—comprehensiveness and accuracy."*

Whether Congress granted or withheld money for the *Index-Catalogue*, Billings was determined that American medicine should have an index to its current literature. With Fletcher he conceived the idea of a monthly index. The material lay ready to hand in the cards they were making for the *Index-Catalogue*. They found a financial supporter in Frederick Leypoldt, of New York, one of our foremost pioneers in commercial bibliography. Already publisher of the *American Catalogue*, the *Trade-List Annual*, *Publishers' Weekly*, and *Library Journal*, he was glad to add this new child to his family.

The first number of *Index Medicus: a monthly classified record of the current medical literature of the world. Compiled under the supervision of Dr. John S. Billings, Surgeon U. S. army, and Dr. Robert Fletcher, M.R.C.S., Eng.*, was dated January 31, 1879. The "prospectus" explained that titles of new books would be classed under subject headings, and would be followed by titles of articles in periodicals on the same

* *Bulletin of the New York Public Library*, v. 17, p. 517.

subjects. An index of authors and another of subjects was promised at the end of the year. Periodicals relating to chemistry, pharmacy, veterinary medicine, and dentistry were not included, though a selection would be made from them for articles bearing upon pathology or therapeutics. The "prefatory remarks" explained that nomenclature and classification were essentially those adopted by the Royal College of Physicians of London, based on Dr. Farre's system. Simplicity of system and convenience of the reader were chiefly to be kept in view.

The *Index* had an honorable career, marked by a constant struggle with the wolf. The original subscription price was $3 per year, but though advanced gradually to $25, it never paid its own way. Leypoldt died in 1884, and George S. Davis of Detroit succeeded him as publisher. Business reverses overtook Davis in 1894, and Dr. Fletcher arranged to have the printing done by Rockwell & Churchill of Boston, taking upon himself the burdens of publisher as well as editor. He could carry it but four years, however, and reluctantly saw the project die in 1898. MM. Charles Richet and Marcel Baudouin of Paris tried to revive it, but published no more than three volumes. In 1903 the Carnegie Institution of Washington took it up as one of the first of its publishing enterprises, and thus a new life has been assured.

CHAPTER V

DIRECTOR OF THE NEW YORK PUBLIC LIBRARY

WE have seen that the young army surgeon was taken from field duty and assigned to the Surgeon-General's Office, December 31, 1864. His promotion was slow: captain and assistant surgeon July 28, 1866, major and surgeon December 2, 1876, and then a wait of nearly twenty years till he reached the rank of lieutenant-colonel and deputy surgeon-general on June 6, 1894, which he held on his retirement October 1, 1895.

To his routine duties he had from the beginning added outside tasks burdensome enough to engage the entire energy of an ordinary man. For instance, not content with directing the work of the Surgeon-General's Library and for nearly fifteen years advising the trustees of the Johns Hopkins Hospital, he had lectured regularly at Johns Hopkins University on the history of medicine, medical education, medical legislation, and related topics. After the hospital was opened in 1889, Philadelphia began to draw him.

In that year Dr. William Pepper, Provost of the University of Pennsylvania, secured his agreement—with the approval of the Surgeon-General—to serve as director of the University Hospital, to take the chair of hygiene, to plan a laboratory of hygiene, and on completion of the *Index-Catalogue* to request retirement from the army that he might give his entire time to academic work. As a result of that agreement, he gave his courses in hygiene, opened the laboratory on Washington's birthday, 1892, and moved to Phila-

delphia in October, 1895. On November 30 of that year he was given a dinner at the Hotel Bellevue, at which, in appreciation of his services to medicine and medical bibliography, a silver box was presented him, containing a check for $10,000, as a testimonial from 259 American and British physicians.

Every indication pointed to complete settlement in his new home. He was among close friends, in congenial surroundings, with ample equipment, and enviable opportunities for research. Influences were then developing in New York, however, that were to make his Philadelphia sojourn a very brief memory.

In May of 1895—only four months before he left Washington and moved to Philadelphia—the New York Public Library had been born. Far-sighted trustees of the Astor Library had come to see that new life, new ideals, new energy were needed if the institution hoped to maintain the honorable rank among American libraries it had held for forty years.

They saw further that they were handicapped by an endowment insufficient for expansion, and also by the Astor name and the popular conception that the Astor family alone was interested in the library.

Just about this time—the early nineties—a new spirit in the Board of Trustees of the Lenox Library was awakening a desire for development, for greater popular use, for casting off the air of seclusion with which current opinion had clothed it after some twenty years' experience. But here, too, funds were lacking.

In still a third field was new library life struggling

to break forth. Samuel J. Tilden had died in 1886 and left the bulk of his estate to the Tilden Trust, which he directed his executors to have incorporated. This Trust was to have "capacity to establish and maintain a free library and reading room in the city of New York, and to promote such scientific and educational objects as my said executors and trustees may more particularly designate." For the next five years the contest over the will ran through all the courts of the state, the Court of Appeals finally deciding against the trustees on October 27, 1891. Fortunately, by a compromise agreement with one of the heirs executed in May of that year, the Tilden Trust had saved for itself one-half the residuary estate, less $975,000 paid this heir in return for her grant to the Trust of her interest in the estate. The Trust owned, after the estate was settled, some 20,000 volumes from Governor Tilden's private library and a fund estimated at about $2,000,000.

The situation of the three libraries was identical: they had the best of intentions, but hopelessly inadequate funds. Fortunately, Mr. John L. Cadwalader of the Astor Library and Mr. Lewis Cass Ledyard of the Tilden Trust decided, after various preliminary unofficial conferences, to broach to their boards the question of combining the two institutions. When these negotiations indicated a successful outcome, they took into their confidence Mr. John Stewart Kennedy, president of the Lenox board. After negotiations of no little delicacy, requiring what President Taft characterized as "genius and statesmanship," the three insti-

tutions gave up their separate existence and formed the New York Public Library on May 23, 1895.

The new institution had two major problems to face at once: first what was to be its policy, and second who was to be its executive officer. The latter was solved when the Executive Committee submitted the name of Dr. Billings to the trustees at their meeting on December 11, 1895, and the board approved at once. The recommendation was due to the Chairman of the Executive Committee, John L. Cadwalader, who was also a brother-in-law of Dr. S. Weir Mitchell, one of Billings's oldest, closest, and most intimate friends.

It was no easy task to ask the university to release Dr. Billings from the work he had then in progress or immediate contemplation, but it was finally agreed that he should stay in Philadelphia till the close of the academic year, giving two days a week to library problems in New York.

The second problem for the trustees was the character and scope of the new library. The situation was peculiar. New York did not lack libraries; as a matter of fact it had too many, most of them too weak for effective results, most of them needlessly duplicating the work of the others. The trustees realized that the city needed a strong, unified, centralized system, possessing circulation and research facilities commensurate with its intellectual and industrial position. A careful survey of their resources convinced them that the combined endowment would allow them to do no more than maintain a reference library unless they

received city aid. How extensive a circulation system might be added would depend on the amount of money the city was willing to furnish.

The question of site was another element in the problem of policy. Without doubt the Astor location on Lafayette Place was unsatisfactory. The Lenox situation was more promising if a reference library alone was to be established. It was not ideal for circulation, however.

After mature consideration the trustees laid the problem before Mayor Strong in an address presented to him on March 25, 1896.* They pointed out their position as to income, collections, and buildings, to show that "while the means at the command of this Corporation are entirely inadequate to undertake the whole work, nevertheless its existing organization and the resources at its command offer to the public an opportunity to secure at a minimum cost such a Public Library System as shall be in keeping with the importance, dignity, and magnitude of the City." They went on to say that "if the City of New York will furnish a proper site, and provide the means to erect thereon a suitable building for the purposes of The New York Public Library, excluding for the present the requirements of branch libraries or delivery stations other than those now controlled by the Free Circulating Library, then The New York Public Library can, through the sale of its present sites, obtain such an addition to its funds as will justify it in

* For the text of the Address see the *Bulletin of the New York Public Library*, January, 1897, v. 1, pp. 22–27.

providing for the circulation of books from its main building. If further funds can be supplied from private benefaction or otherwise, sufficient to establish and maintain an adequate number of branches for circulation, it is certain that the City of New York can and will have a free Public Library on the broadest and most comprehensive plan." They formally applied "to the City authorities for their approval of such legislation as will enable the City to grant to this Corporation, by some permanent tenure, a proper site for its Library Building and such funds as may be necessary to enable this Corporation to construct and equip its building thereon; and that the site of the present Reservoir on Fifth Avenue, between Fortieth and Forty-second Streets, be granted for that purpose." The mayor received the letter with favor and promised careful consideration on the part of the city.

And thus matters rested during the summer of 1896. Dr. Billings spent June to September in Europe, attending the international conference on scientific literature called by the Royal Society of London and studying British and Continental book trade and library conditions. On his return he gave his full time to the work that was to occupy his mind and strength for the next seventeen years.

Though consolidation had been effected over a year before, little change had been made in the administration or the character of either library. At the Astor building was an admirably strong collection of works in almost all fields of knowledge, somewhat behind the times, perhaps, but nevertheless a good working

library tested by time and the demands of many scholars. Estimates made at the end of 1896 showed 283,207 volumes on its shelves, and 30,000 pamphlets. The Lenox collection was unsurpassed in certain well-defined fields; outside of those lines it had little or nothing. In American history before 1800, in early printed books, in Bibles, Bunyan, Shakespeare, Milton, it ranked high. It had in the Duyckinck collection a respectable library of modern English and American literature; in the Astoin collection a representation of modern French literature; in the Drexel collection it stood well in early music. Specialists in these fields used it to great advantage; to the general public, however, it seemed a somewhat forbidding museum rather than a library.

Cataloguing conditions seem almost incredible. At the Astor building were two alphabets of printed catalogues issued respectively in 1860 and 1880, called the Cogswell and Nelson catalogues after their editors. These were author catalogues, with no subject entries; the Cogswell catalogue had a supplement printed in 1866, to which was appended a very rough index of subjects. Accessions since 1880 were recorded on cards of standard size, the "Bulletin" or continuation record, intended to furnish copy when a new printed catalogue should be issued. This was an author catalogue, the alphabetical sequence broken somewhat by formation of several groups such as "French literature," "German literature," etc. There were two other card catalogues for accessions since 1880, one for official and one for public use. These were on

small cards, about five inches long by two inches wide, and included author and subject entries in one alphabetical sequence. Pamphlets were sometimes catalogued by author, sometimes by subject, usually without collation.

At the Lenox building a card catalogue of about 60,000 entries furnished a partial index to the collection, but it was not complete as to authors or subjects.

The cataloguing force numbered two at the Astor building and one at Lenox at the beginning of 1896. In February Dr. Billings organized a catalogue department, established uniform rules for both buildings, and during the year brought the department up to a force of sixteen, seven at Lenox and nine at Astor. He found at Astor some 25,000 volumes uncatalogued and at Lenox 100,000; in addition about 150,000 volumes at Astor required recataloguing.

During the summer of 1896 two copies of the Astor printed catalogues were cut up and the entries pasted on cards and alphabetized to serve as the basis of a subject catalogue for the older portion of the library. New accessions were catalogued both by author and subject and the so-called "pasted cards" were filed in with these new cards as fast as their subject headings were pencilled on their top lines and the location marks transferred from the printed catalogues. At first an attempt was made to maintain two complete catalogues of author and subject entries, one for public the other for official use; but it was soon decided to confine the official catalogue to author entries alone.

Neither branch had a shelf list. Though the necessity for a shelf list was recognized by Dr. Billings, he allowed work on it to be deferred until the recataloguing and reclassifying had made greater progress, then it was deferred until removal to the new building. Looking at the problem now, with all the advantage of retrospect, it is evident that this was a mistake, and that the problem might better have been thoroughly threshed out at the beginning.

The question of classification was quite as difficult as that of cataloguing. In both buildings the classification was a fixed system. The Astor collection was grouped broadly by subjects, with location of individual volumes indicated by a system of numbered presses and shelves lettered from bottom to top. At the Lenox building the classification was a grouping by collection or source. The Americana, backbone of the library, was arranged by date of publication; the Bibles by language and then chronologically by edition, the other collections in broad groupings by subject, all with fixed location.

Dr. Billings drew up a scheme of classification and of relative location as one of his earliest contributions to reorganization. This scheme grouped the collections into two broad classes, one called the "star" group, the rest without a special name. The first group comprised books that would go into special rooms in the new building, such as the Americana, the music collection, the Bibles, oriental books, etc.; or books of a kind that would by their physical character, form, or for some similar reason require special

treatment. Newspaper files, collections of general periodicals, general encyclopaedias serve as types of this latter group. The remainder—and the larger part of the collection, in point of bulk—would be shelved in the main stack room and form the second main class.

Subdivisions in each of the two main groups were indicated by letters of the alphabet. Thus, newspapers formed the *A class, general collections *C, general periodicals *D, general societies *E, general museums *F, bibliography *G, libraries *H, book arts *I, incunabula *K, manuscripts *L, music *M, collections of English literature *N, orientalia *O, Jewish books *P, Slavonic books *Q, books on the open reference shelves *R, public documents *S, patents *V, Bibles *Y.

The principal subdivisions in the second main group were: biography A, history B–I, geography K–L, art M, literature N, mathematical sciences O, physical sciences P, biological sciences Q, philology R, sociology S, economics T, useful arts V, medicine W, law X, philosophy Y, religion Z.

In his *Memorandum on classification in the New York Public Library*, dated January 1, 1899, Dr. Billings explains that the main principle kept in view had been the convenience of the reader; the relative importance of different subjects as they would appear in a scheme of the divisions of human knowledge had little weight.

> Upon this classification it may be remarked that it is not a copy of any classification used elsewhere; that it is not specially original; that it is not logical so far as the

succession of different departments in relation to the operations of the human mind is concerned; that it is not recommended for any other library, and that no librarian of another library would approve of it. As to the system of marking, it is not mnemonic, and its chief recommendation is that it indicates the classes with a comparatively small number of signs. By its means books in the library are divided into about 12,000 groups, with an average of less than forty (40) books in each group, and the average number of letters in the mark for each of these 12,000 groups is three. Where more minute classification proves desirable another letter can be added; four-letter groups would give us 250,000 groups.

It has seemed best to carry on here the statement about the classification of the new library rather than to trace the development piecemeal, as it was worked out year by year in connection with other problems. Begun in 1897, reclassification was not completed till after removal to the new building. The classification scheme for the circulation department was deferred until that department was established, and then it was found advisable to continue the decimal system already used by the branches then existing.

Turning back to 1896, we find the new director faced with incongruous catalogues and inadequate classification systems. Standardizing each according to the best practice of the day was one of his first achievements. He found both buildings without artificial light. This necessitated closing at four or four-thirty on winter or cloudy afternoons. Electric light was installed in each building, current being taken from the Edison company at Lenox, an independent

supply being generated at the Astor building. Some two miles of temporary wooden shelving set up during 1896 gave a welcome relief. At the Lenox building hundreds of books were piled on the floor, and in most cases there were two rows on each shelf; conditions at the Astor building were almost as bad.

In the summer of 1896 both buildings closed as usual for three weeks, Lenox early in August, Astor in September. This year marked an end to that system, however, vacations being taken thereafter without closing the building.

Heretofore it had been the policy of the Astor Library to add its periodicals mainly in form of bound volumes. This was simpler for the librarian, but was somewhat hard on the reader interested in current issues. Dr. Billings made a complete change in policy, ordering some 350 new titles, making all available for consultation at time of publication, moving the entire collection of current numbers to the south hall of the Astor building, and putting 100 of the most popular on shelves open to the public without the necessity of formal application.

During the summer of 1895, the Tilden books were moved to the Lenox building from the Governor's house in Gramercy Park; pending the development of the definitive scheme of classification, they were roughly grouped according to the decimal system.

This is a sketch of the life of John Shaw Billings, not a history of the New York Public Library, which makes it impossible to give in any great detail an ac-

count of the growth of the library in volumes, the intensive cultivation given its existing collections, the increase in its use, and the widening interest by the public as it became evident that new life was throbbing in its veins. A mere narrative of some of the changes introduced will, however, indicate the wideness of results effected: a bindery established at the Astor building for the simpler repairs and rebinding; a new reading room for music, local history, and genealogy, opened at the Lenox branch in the former exhibition room; the establishment in April, 1898, of an "index-catalogue" on cards recording author and subject of all books received since 1897, with additional entries for such of the books received before that date as had been recatalogued and reclassified, and subject entries for important articles in current periodicals; the establishment of an apprentice class; the establishment of rooms for manuscripts, maps, prints, of special collections of Jewish, oriental, and Slavonic books with curators for each; the monthly "Bulletin," begun in 1897 as a means of information about the library, its collections and additions.

These improvements were of course reflected in the number of readers. In 1895 were recorded 94,331 readers and 260,694 volumes used by them at both buildings. In 1896 these figures grew to 109,488 readers and 292,205 volumes. The subsequent growth was steady and constant, rising to 163,810 readers and 658,840 volumes in 1910, the last full year in the old buildings.

Machinery designed by Dr. Billings had the habit

of operating fairly successfully when once set going, and the administration of what later became the reference department of the library was no exception. To the end of his days he kept a firm control over most of its activities, somewhat unobtrusive in many respects, but none the less evident when necessary. He was responsible for the book purchases, and felt keenly the necessity of maintaining the standards set by Cogswell. It is not too much to say that he handled or examined most of the accessions, and the essential "bookishness" of the man was never more apparent than when he stood over a table of new arrivals, whether purchases or gifts, rapidly scanning the entire collection, selecting here and there a title or two for longer inspection, and finally running off to his office with half a dozen tucked under his arm for consultation at leisure.

At the same time the director was introducing these administrative improvements, he was busily engaged with the trustees in securing authorization from the city for a new building for the library. After the favorable reception of their address to Mayor Strong presented March 25, 1896, the next step forward was a resolution, adopted by the Board of Aldermen December 22, 1896, providing that the land occupied by the Croton reservoir at 5th Avenue and 42d Street should constitute a public park. On February 11, 1897, the Board of Estimate provided for the removal of the reservoir. The scene now shifts to Albany, where the legislature, on May 19, 1897, passed "an act to provide for the construction of a

public building in Bryant park in the city of New York, to be occupied by the New York Public Library, Astor, Lenox, and Tilden foundations."

On May 21, 1897, the trustees sent out their notices of the preliminary competition for the new building. This competition was open to all architects doing business within the limits of greater New York. It closed July 15, and eighty-eight architects submitted plans. From these plans, William R. Ware, professor of architecture at Columbia, Colonel Bernard R. Green, constructor of the Congressional Library, and Dr. Billings selected the best twelve, the authors of which were paid $400 each. From these twelve six were selected, to be joined with six others chosen by the trustees as participants in a second competition, which closed on November 1. Each of the latter twelve was to receive $800 as the estimated cost of the drawings. The jury of award consisted of three architects chosen by the contestants, three members of the Board of Trustees, and Dr. Billings. Three plans were selected by the jury for submission to the trustees, and from these three the trustees chose the set recommended by the jury as the best, being the plans submitted by Messrs. Carrère and Hastings.

These followed very closely the suggestions set forth in the invitation to the first competition in May which were drawn up by Professor Ware in conference with Dr. Billings, and it is interesting to see how minutely the rough pencil sketches made by Dr. Billings for Professor Ware in April foreshadow the building in its final form. The reading room at the

back of the third floor, on top of the book stacks; the two courts for light and air; administrative offices at the south end of the building; reading rooms on the street fronts,—all were evidently in his mind from the beginning.

The plans of Carrère and Hastings, approved by the trustees, were submitted to the Board of Estimate and Apportionment, which approved them on December 1, and authorized the Department of Public Parks to remove the reservoir and to erect, construct, maintain, and equip on this site a suitable and appropriate fireproof building in accordance with these plans.

On December 8 a contract between the city and the library was executed, providing that the city should lease to the library for occupancy the building to be erected in Bryant Park, so long as it should use and occupy the building as a free public library and reading room, one or more of the reading rooms to be open every week day from nine a.m. to nine p.m., and on Sundays from one to nine p.m.; a free circulating branch to be open during the daytime on Sunday and during the evening of each other day of the week, as prescribed by the trustees.

The Park Department contracted with Carrère and Hastings as architects on December 9, and from then on the machinery turned, very slowly, to be sure, sometimes with much creaking. Space is lacking here for a detailed statement of the progress or for a minute narration of the political, legal, industrial difficulties encountered. Many such there were, but faith, fore-

sight, and persistence finally won, and Dr. Billings had the satisfaction of seeing the cornerstone of the new building laid on November 11, 1902; then after nine long years the closing of the Lenox building on March 18, 1911, and of the Astor building on April 15, preliminaries to the opening of the new building on May 23, the sixteenth anniversary of the agreement of consolidation and fourteen years after the first competition for plans.

After the reorganization of the staff had been effected in 1897, reclassification and recataloguing had been put under way in 1897 and 1898, and the plans for the new building worked over with city authorities, architects, and engineers in 1897 and 1898, there came a time when the staff machinery, cleaning up of back work, development of the new building, all seemed to be running with reasonable smoothness, and the time fitting for new activities.

The overture opened here in the summer of 1900, when Mr. Bird S. Coler, comptroller of the city, asked the trustees to investigate on his behalf the various circulation libraries then receiving money from the city. Dr. Billings spent the greater part of the summer studying the conditions and submitted his report to the Executive Committee of the Board of Trustees on September 15; the committee on the 24th following forwarding this report to the comptroller.

In his report Dr. Billings showed how the faulty principle of basing the city appropriation on a fixed rate per volume circulated led to unduly emphasizing popular books and to discouraging the less popular

but more important works in history, biography, science, useful arts, etc.; it discouraged expenditures for reading rooms and the reference works they should furnish. He pointed to the necessity for additional circulation centres, to the absence of any system of accountability for the funds furnished by the city and of any uniform system of returns or reports to show the character of the work accomplished.

In their report the Executive Committee stated plainly that New York was far behind other cities in its support of the circulation libraries. In 1899 Boston had spent for library purposes 2.1 per cent of its total expenditures; Buffalo, 1.6 per cent; Chicago, .85 per cent; and New York but .35 per cent. They recommended that the city should make its appropriations for library purposes in future "under such conditions and restrictions as will ensure the organization of a definite central system of work with satisfactory supervision and accountability"; "that one of the existing library corporations in the city be requested to undertake the organization of such a system," this corporation to act also "as the central authority for the approval of the objects of expenditure for each of the several libraries entitled to grants of funds under the State library law, for making systematic inspections of such libraries with reference to the character and amount of the work done by each, and that it should make a full report to the municipal authorities of what had been done during the year, with recommendations as it may deem best."

Informal conferences between the trustees of the

New York Public Library and trustees of the New York Free Circulating Library had been under way for some months. The latter library at this time was the largest circulation agency in the city, had had an honorable and creditable career for some twenty years, and had among its trustees and members some of the most devoted, most public spirited, most forward looking men and women in the city. On January 11, 1901, an agreement to consolidate the two institutions was executed, and the New York Public Library thereupon acquired a circulation department with eleven branches.

In these years, 1900–1, Dr. Billings had numerous conferences with Mr. Carnegie and put before him in detail the circumstances confronting the library and the city; as a result of which on March 12, 1901, Mr. Carnegie wrote to Dr. Billings offering to furnish the money for the erection of circulation branches to the amount of about $5,200,000 on condition that the city furnish sites for the buildings and agree to maintain them when built. This letter was laid before the trustees and by them forwarded to the mayor on the 15th, with a letter offering their co-operation if the city favored the plan.

As a result of various conferences between the trustees and city officials legislative permission was secured at Albany for acceptance of the gift, and a contract between the city and the library as agent for Mr. Carnegie was executed July 18. This provided in brief that the city was to acquire not more than forty-two sites in the boroughs of Manhattan, The Bronx, and Richmond, on which the library was to erect build-

ings from funds to be provided by Mr. Carnegie. The agreement included the usual ten per cent clause. The buildings were to have a delivery room and at least one reading room open every week day (legal holidays included) from nine a.m. to nine p.m. The Sunday hours were to be agreed upon by the library and the Board of Estimate. The city was to supply the books and the library was to "appoint, direct, control, and remove all employees."

With the New York Free Circulating Library setting the pace and the prospects of the Carnegie money before them, very strong inducements were held out for consolidation of the other circulation libraries in the city, and it was not long till practically all came within the fold. The first chief of the circulation department was Dr. Arthur E. Bostwick, who had been the second librarian of the New York Free Circulating Library, had served as the librarian of the Brooklyn Public Library, and who came back to circulation work in Manhattan in February, 1901. Dr. Billings saw the eleven branches of this first year grow to forty the year before he died; the circulation of 1,837,387 volumes in 1901 having risen to 7,969,664 in 1912.

The century turned, we learned to call it the twentieth instead of the nineteenth, but the director changed little if at all. While the circulation department was in its birth throes he found time for conferences with the federal census bureau about the new census, time to make a survey of the progress of medicine in the nineteenth century for the history of that

period the Putnams were to issue, to make an address at the dedication of the new building of the Boston Medical Library in January, 1901, to read a biographical memoir of Francis Amasa Walker before the National Academy of Sciences April 17, 1902, and to serve as the President of the American Library Association at its meeting in Magnolia, Massachusetts, in June, 1902.

Those who attended that meeting agree that he made a delightful presiding officer, that his address was stimulating and thoughtful, that his personality was ever apparent, whether when announcing the endowment of the Publishing Board by Mr. Carnegie, or introducing President Eliot for his plea for separation of "live books" from those seldom used.

In this same period of 1901–2 he was actively engaged with Dr. Daniel C. Gilman in the establishment and incorporation of the Carnegie Institution of Washington. He was one of the original incorporators (January 4, 1902), served as the first vice-chairman, and on the death of Mr. Abram S. Hewitt became chairman of the Board of Trustees in 1903, a position he held till his death. He served also as a member of the executive committee from January, 1902, to February, 1913.

And now he might well have spoken the words of Simeon. He had done the full work of one man and more. He had seen his youthful vision of a great medical library realized under his own direction. He had seen his indexes and other bibliographical schemes flourish and bear fruit. He had established and organ-

ized a great library system in a great city, had planned and furnished fitting buildings and homes to house it, he had found a worthy successor in Edwin H. Anderson, the organizer of the Carnegie library system in Pittsburgh and later state librarian of New York. He had worked hard, and after the opening of the new central building had few desires or hopes unfulfilled.

Adjustment to the conditions in the new building was no slight thing, but his foresight, fortitude, unruffled demeanor helped mightily. The second summer in the new building brought sorrow to his door. Mrs. Billings died in Sharon, Connecticut, on August 19, 1912, and his grief, though sparingly expressed, was seen as none the less real and deep by those privileged to know him.

Notwithstanding his wonderful physique, he bore throughout his life more than his share of sickness. This he accepted in much the same fashion as he accepted heat or cold, rain or fog, or any other phenomenon of nature, soberly, unemotionally. He refused to allow such things to interfere with his daily routine, and when he did take to his bed one knew he did it because there was no choice. I remember how, on one of his frequent trips from Boston while working on the Peter Bent Brigham Hospital, he came directly to the library from the railroad station, cleaned up the business accumulated during his absence, and then this man of seventy explained apologetically that if he was irregular in office hours for the next few days it must be charged to a rib he broke when the train gave an unexpected lurch near Bridgeport. While

with the library he submitted thrice to major operations, in February, 1900, November, 1906, and January, 1908. Never loquacious, little given to talking about himself, he seldom spoke about these events, though occasionally in semi-humorous grumbling he would say, "Well, if I have to do it again, I 'll forsake New York hospitals and go to Johns Hopkins." When the time came to announce his approaching absence he was always most matter of fact, unemotional, usually expressing his chance for return as "'Bout three to one, three to one."

The winter that followed Mrs. Billings's death wore on him greatly, and as the months went by his own judgment and that of his medical friends concurred in advising another operation. He told a few of his friends a week or so before he left and then characteristically said nothing more, checking his book catalogues and periodicals, dipping into the new book arrivals, smoking his cigar, living his daily routine with his usual unruffled, impassive, serene demeanor. The afternoon he left for the hospital, March 3, 1913, he came to my desk, put out his hand with a smile and "Goodbye," and was gone. Nothing more, but all done in most unforgettable fashion, the essence of all that was lovable in the man, engagingly affectionate, fatherly, brotherly, even sweet, if such a word can be applied to a man so emphatically virile and masculine.

The operation took place on the 4th, and for the first few days he rallied in most encouraging fashion. Pneumonia set in, however, and he grew weaker, and died on the evening of Tuesday, the 11th.

He was buried with military honors at Arlington on the morning of Friday, March 14, 1913, funeral services being held in St. John's Church, Georgetown, where he had been married fifty-one years before.

It is not easy to give an adequate idea of the man. He had done so many things and all so well, had worked with so many different kinds of men, that life in his later years offered little that was new to him. He took things in quickly, and made few obvious comments. Under ordinary circumstances he was taciturn, not to say reserved. With such characteristics it was easy to see how the first impression he made might be one of aloofness, indifference, brusqueness, or coldness. Austere he was, quite in the spirit of his New England forbears and the Shorter Catechism. But lovable he was too, charming in his manner, kind, thoughtful, considerate. The army officer was apparent in countless ways, in what he expected as well as in what he did. The medical man and the scientist appeared with equal frequency, in his attitude to life, in the way he faced the great problems of nature, in his scrupulously careful weighing of evidence, in his methods of attacking new problems, in his survey of a situation, in his balancing the facts apparent with proper weighing and valuation of all phases of the question. Had he gone to the law he would have been, in all probability, a better judge than an advocate, though few advocates could have excelled him in clarity of exposition or strength of conviction. Had his army life given him command of troops, he would have made his mark either in the field or on the staff.

He knew men and man, had himself under admirable control, and could govern and control others, too. Present day churches or church services drew him but little. He was interested in — and amused at — theological polemics, principally as a form of intellectual gymnastics. His personal religion was emphatically a development of his own interpretation of nature, rather than an acceptance of a creed handed down by any body of divines. He was too apt to form his own opinions and to draw his own deductions to take any set of articles formulated by authority. He was a born leader, and had unshaken confidence in his own judgment.

His friends and fellow workers soon came to have equal confidence in that judgment, soon came to find their reward in the satisfaction of working with him and of receiving — occasionally, not too often — a word of commendation. I never knew a man who could say "No" so frequently, who could brush aside so summarily one's pet schemes and yet send one away marvelling how that refusal brought increased respect and affection.

One of his most helpful, most delightful characteristics was his uncanny ability to see the essence of a thing, its real meaning, its real consequences, and when considering it to brush aside extraneous qualities. He seized upon essentials and settled them once and for all, leaving for later treatment or for oblivion the things that had no bearing upon the real question at issue.

Through all his activities, however, through all his various interests, through all periods of his life, stands

out, preëminent and persistent, his love of books. He had read the Bible word for word by the time he was eight; he read wherever he was and whatever he was doing. At sea or on land, at home or away, in the city or in the country, his book and his cigar formed his constant companions. He read as he worked, easily, with little apparent effort, grasping the idea quickly and retaining it in a way that made ordinary men admire and despair. He was interested in almost any book, though he was not interested in everything books dealt with. He was first and foremost a scientist, and the printed world of science and medicine was as familiar to him as the alphabet. His studies of the history of medicine led him into a field that interested him thoroughly,— the early days when physician, priest, and prophet were combined. His knowledge of the lore of magic, of eastern mysticism, cabalistic and proverbial philosophy was wide and intimate. The great books of the world, Job, Faust, the Greek poets, Shakespeare, were his familiar companions. Modern English authors he knew through and through; modern Continental writers interested him slightly.

He was a tall man, sturdily built, well proportioned, of soldierly erectness till advancing age bent him slightly, with a long, narrow head and close-set gray blue eyes. He had a strong temper, usually well under control. His frown could be emphatic, but when he smiled the kindly soul behind those eyes shone forth with equal emphasis. As reticent in praise as in reproof, the weight of either was unmistakable when

he did express it. Loyalty to friends and ideals, wideness of sympathy and of vision, tenacity of purpose, ceaseless industry, consideration of others before himself, gentleness combined with firmness, were some of the characteristics of this remarkable man, a soldier and a scholar, a bookman and a scientist, above all, a gentleman.

Appendix and Index

APPENDIX

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